

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: CHOI et al.

Application No.: 10/798,456

Filed: March 10, 2004

Title: LINE EDGE ROUGHNESS CONTROL

Attorney Docket No.:  
LAM1P187/P930X

Examiner: UMEZ-ERONINI, Lynette T.

Group: 1765

Confirmation No.: 6110

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first-class mail on June 23, 2006 in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Signed: \_\_\_\_\_

*Sue Funchess*  
Sue Funchess

**INFORMATION DISCLOSURE STATEMENT  
BEFORE FINAL ACTION OR NOTICE OF ALLOWANCE  
(37 CFR §§ 1.56 AND 1.97(c))**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The references listed in the attached PTO Form 1449, copies of which are attached, may be material to examination of the above-identified patent application. Applicants submit these references in compliance with their duty of disclosure pursuant to 37 CFR §§1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

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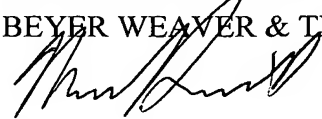
This Information Disclosure Statement is being filed after the mailing date of the first Office Action on the merits, or after three months of the filing date of this application, whichever event occurred last, but it is believed before the mailing date of either: (i) a final action under §1.113 or (ii) a notice of allowance under §1.311, whichever occurs first.

Accompanying this Information Disclosure Statement is

- ☐ a statement as specified in 37 CFR 1.97(e); or  
☒ the fee set forth in 37 CFR 1.17(p).

If fees are due, enclosed is our Check No. 30345 for \$180.00 in payment of the Information Disclosure Statement Fee. If it is determined that any additional fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-0388 (Order No. LAM1P187).

Respectfully submitted,  
BEYER WEAVER & THOMAS, LLP



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Form 1449 (Modified)	Atty Docket No. <b>LAM1P187/P1216</b>	Application No.: <b>10/798,456</b>
<b>Information Disclosure Statement By Applicant</b>	Applicant: <b>CHOI et al.</b>	
(Use Several Sheets if Necessary)	Filing Date <b>March 10, 2004</b>	Group <b>1765</b>

#### U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A1.						

#### Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	B1.	0050972	05/05/82	EPO	H01L	21/88	X	
	B2.	0496614	07/29/92	EPO	H01L	21/3105	X	
	B3.	0553961	08/04/93	EPO	H01L	21/311	X	
	B4.	0777267	06/04/97	EPO	H01L	21/311	X	
	B5.	1041614	10/04/00	EPO	H01L	21/306	X	
	B6.	2000340552	12/08/00	Japan	H01L	21/3065	X	
	B7.	2001110784	04/20/01	Japan	H01L	21/3065	X	
	B8.	11-111680	04/23/99	Japan	H01L	21/3065	X	
	B9.	11-016887	01/22/99	Japan	H01L	21/3065	X	
	B10.	0889507	01/07/99	EPO	H01L	21/311	X	
	B11.	0305268	03/01/89	EPO	H01L	21/306	X	

#### Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	C1.	Horiike Y. et al., "High Rate and Highly Selective SiO <sub>2</sub> Etching Employing Inductively Coupled Plasma and Discussion on Reaction Kinetics", Journal of Vacuum Science and Technology: Part A, American Institute of Physics, New York, US, Vol. 13, no. 3, Part 1, 1 May 1995, pp. 801-809.
	C2.	Kumar M.J. et al., "Selective Reactive Ion Etching of PECVD Silicon Nitride over Amorphous Silicon in CF <sub>4</sub> /H <sub>2</sub> and Nitrogen Containing CF <sub>4</sub> /H <sub>2</sub> Plasma Gas Mixtures", Solid State Electronics, Elsevier Science Publishers, Barking, GB, vol. 39, no. 1, 1995, pp. 33-37.
	C3.	Maeda M. et al., "Low Dielectric Constant Amorphous SiBN Ternary Films Prepared by Plasma-Enhanced Deposition", Japanese Journal of Applied Physics, Publication Office Japanese Journal of Applied Physics, Tokyo, Japan, vol. 26, no. 5, Part 1, 1 May 1987, pp. 660-665.
	C4.	Norstrom H., "Silicon Surface Damage Caused by Reactive Ion Etching in Fluorocarbon Gas Mixtures Containing Hydrogen", Journal of Vacuum Science and Technology: Part B, American Institute of Physics, New York, US, vol. 9, no. 1, 1991, pp. 34-40.

Examiner	Date Considered
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Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>Form 1449 (Modified)</b>  <b>Information Disclosure Statement By Applicant</b>  (Use Several Sheets if Necessary)	Atty Docket No.	Application No.:
	<b>LAM1P187/P1216</b>	<b>10/798,456</b>
	Applicant:	
	<b>CHOI et al.</b>	
	Filing Date	Group
	<b>March 10, 2004</b>	<b>1765</b>

	C5.	Norstrom H. et al., "RIE of SiO <sub>2</sub> in Doped and Undoped Fluorocarbon Plasmas", Vacuum, Pergamon Press Ltd., Great Britian, Vol. 32, No. 12, pp. 737-745; 1982.
	C6.	Standaert, T.E.F.M. et al., "Patterning of Fluorine-, Hydrogen-, and Carbon-Containing SiO <sub>2</sub> -Like Low Dielectric Constant Materials in High-Density Fluorocarbon Plasmas: Comparison with SiO <sub>2</sub> ", Journal of Vacuum Science and Technology A 173(3), May/June 1999, pp. 741-748.
	C7.	International Search Report or the Declaration for PCT/US03/18791 dated 01/16/2004.
	C8.	Written Opinion dated March 2, 2004 for PCT/US03/18791.

Examiner	Date Considered
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Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.